

Self-Esteem, Perceived Stress, and Emotional Distress Among Mothers of School-Age Autistic Children in Sale, Morocco: A Cross-Sectional Psychometric Study Using the RSES, PSS-10, and HADS

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ABSTRACT:

Background. Caring for a child with autism spectrum disorder is difficult anywhere. In Morocco, it is especially so not because Moroccan mothers are less resilient, but because the support systems that might absorb part of that difficulty are, in many cases, simply absent. Three specialized centers in Sale gave us access to 102 of these women, and what we found in their questionnaire data was striking enough to warrant detailed reporting: self-esteem, stress, and emotional distress were so tightly interwoven in this sample that the correlations between our three instruments approached values one does not typically see outside of laboratory-controlled conditions.

Methods. We kept it real and worked with 102 mothers in Salé who have kids under 12 with an autism diagnosis. Instead of just cold-calling, we met them through three local centers. We used Arabic versions of standard scales, but we made sure they actually made sense for our culture. We weren't just looking for numbers; we wanted to see the real human link between how a mother feels about herself and how she manages to keep her head above water.

Results. Means: RSES = 32.05 (SD = 3.67), PSS-10 = 20.48 (SD = 10.64), HADS = 8.52 (SD = 3.21)—the last sitting at the borderline clinical threshold. All bivariate correlations exceeded $r = .87$ in absolute value ($p < .001$). Mothers whose children benefited from AVS school-support showed dramatically more favorable profiles than those without ($d = 2.30$ – 2.65 across the three measures). A near-monotonic educational gradient governed outcomes across five attainment levels. Mediation analysis confirmed that perceived stress mediates roughly 80% of the self-esteem effect on affective burden (bootstrapped 95% CI $[-0.814, -0.632]$).

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Conclusion. Self-esteem does not protect these women from distress by some abstract mechanism it protects them by keeping their sense of the situation as manageable rather than overwhelming. When that sense collapses, anxiety and depression follow. Expanding AVS coverage and building self-esteem-focused support into autism care pathways are, on the strength of these findings, priorities that decision-makers in the Rabat–Sale region can no longer treat as optional.

Keywords: autism spectrum disorder; caregiver burden ; maternal mental health; self-esteem; perceived stress; anxiety; depression; Morocco; MENA region.

1. Introduction

1.1 The Mother Behind the Diagnosis

Autism spectrum disorder is now estimated to affect between 1 in 36 and 1 in 100 children depending on the country and the methodology used (Lord et al., 2018; CDC, 2023). Those numbers translate, across the globe, into millions of households reorganized around a child whose developmental needs demand sustained attention, institutional navigation, and daily improvisation. In most of those households, across most cultural settings, this reorganization falls principally on the mother. She absorbs the appointments, the school meetings, the therapy sessions, and the accumulated exhaustion that none of these schedules fully accounts for.

What this absorbs from her psychologically has been well documented. Her parenting stress is higher than that of mothers of typically developing children—confirmed across enough samples to count as a robust finding (Hayes & Watson, 2013; Dunn et al., 2001). Her rates of depression and anxiety are elevated. Her social life contracts. Woodman (2014) showed, moreover, that this does not simply plateau and stabilize: the burden fluctuates with the child's school transitions, with the family's financial pressures, with the health system's varying degrees of responsiveness. It is a dynamic rather than a static condition.

What this literature has been slower to examine is the specific psychological architecture through which burden produces breakdown in different contexts. Why does one mother manage, while another, facing comparable circumstances, does

not? The answer, most researchers now suspect, lies substantially in internal psychological resources—among which self-esteem has attracted the most sustained theoretical and empirical attention. And yet: almost all of this work has been conducted in Western, high-income settings that differ from the Moroccan context in ways that are not merely logistical. They differ culturally. They differ institutionally. They differ in the social grammar through which a child's neurodevelopmental difference is interpreted by those around the family. Translating conclusions from Sheffield or Stockholm to Sale without that translation being questioned is not caution. It is assumption.

1.2 Sale: What Makes This Context Specific

Morocco has been moving, since 2016, toward a more structured national response to autism. New specialized centers, improved diagnostic access in the major cities, more visible advocacy—the progress is real. So is the gap between what the policy documents describe and what families encounter on the ground. In Sale—a city of more than a million people situated directly across the BouRegreg from the capital Rabat, yet with a socio-economic profile considerably more modest than its neighbor's—the school-based support mechanism known as AVS (Auxiliaires de Vie Scolaire, trained assistants assigned to autistic children in school settings) is implemented unevenly. Fifty-eight of the 102 mothers in our sample more than half—had no such support for their child (Benabbou et al., 2019; Ouazzi et al., 2021). That figure is not incidental to the study. It is, in part, what the study is about.

Layered over the institutional picture is Hshuma. The concept does not translate cleanly into English. ‘Shame’ comes close but misses the collective dimension: Hshuma is a social exposure, a cost incurred when the family’s deviation from normative expectations becomes visible in the community. For mothers of autistic children, this exposure is chronic. Extended family members, who attribute the child’s condition to the mother’s emotional state during pregnancy, to insufficient religious observance, or simply to poor parenting, are not uncommon figures in the clinical accounts of Moroccan families (Belhadj et al., 2014). Over time, these encounters do something measurable: they erode the mother’s sense of her own worth. Regional data from Jordan (Hamdan et al., 2020) and Oman (Al-Farsi et al., 2016) confirm that Arab ASD caregiving populations carry psychological burden profiles shaped by these specific dynamics, not simply by the generic demands of caring for a neurodevelopmental atypical child.

1.3 Theoretical Logic

Two frameworks organized the hypothesis set. Hobfoll’s (1989) Conservation of Resources theory positions distress as a consequence of resource loss or threatened loss. Self-esteem is, in this framework, a central personal resource: when it erodes, the erosion tends not to remain contained. It spreads to adjacent capacities self-efficacy, motivation, adaptive coping. The mother who has lost confidence in her own worth has lost the psychological material from which every other coping strategy is constructed.

Lazarus and Folkman’s (1984) transactional model explains the route from that resource loss to clinical affective disorder. Stress, in their framework, is an appraisal outcome: the product of a cognitive evaluation in which incoming demands are weighed against perceived coping resources. That evaluation draws on the person’s working model of their own competence and worth. A mother whose self-regard has been worn down by Hshuma and institutional indifference brings a systematically distorted secondary appraisal to this process: she underestimates what she can handle, overestimates what is being demanded of her, and

perceives the gap between the two as permanent. Perceived stress rises. And when it rises without relief, the HADS starts to move. The RSES captures the upstream resource; the PSS-10 captures the appraisal mechanism; the HADS captures the downstream affective consequence. The three instruments were chosen to map this chain, end to end.

1.4 Hypotheses

Before data collection, four hypotheses were registered:

- H1: Strong negative correlation between RSES and PSS-10 ($r < 0$, $p < .001$).
- H2: Strong negative correlation between RSES and HADS total ($r < 0$, $p < .001$), indicating a direct self-esteem buffering effect on affective symptomatology.
- H3: PSS-10 will mediate the RSES $\rightarrow$ HADS relationship, carrying the majority of the self-esteem effect through the appraisal mechanism.
- H4: AVS access and higher educational attainment will each produce meaningfully more favorable profiles on all three instruments.

2. Methods

2.1 Design and Setting

The study is cross-sectional and correlational—a choice made deliberately, not by default. The aim was to characterize the relational structure between psychological constructs in a specific, under researched population, not to track individual trajectories over time. Three specialized autism intervention and schooling centers in Sale served as recruitment sites. They were chosen because their combined catchment population spans the socio-economic and educational range required for the subgroup analyses central to H4.

2.2 Participants

Mothers were eligible if they were the biological mother of a child aged 3–11 with a formal ASD diagnosis from a qualified medical or multidisciplinary team, with that child currently enrolled at one of the three centers, and if they provided written informed consent. Two exclusion

grounds applied: documented severe psychiatric illness precluding valid self-report, and questionnaire completion below the 90% threshold. Of 115 mothers approached, 13 were excluded. Final analytical sample: $N = 102$.

Power: Cohen's (1988) tables confirm that 102 participants exceed the minimum required to detect $r \geq .30$ at $\alpha = .05$ with power over .80. Given that the correlations we ultimately obtained ranged from .87 to .90, this concern is retrospectively moot. Field's (2018) *n*-to-predictor ratio guidelines for stable regression were also satisfied.

2.3 Instruments

2.3.1 Rosenberg Self-Esteem Scale (RSES)

The RSES has been the default global self-esteem measure in psychological research since Rosenberg introduced it in the 1960s (Rosenberg, 1965). Ten items, four-point Likert format, five reverse-scored. Total: 10–40. Normative bands: very low (< 25), low (25–30), average (31–34), high (34–39), very high (> 39). Internal consistency: $\alpha = .77-.88$ across 53 nations (Schmitt & Allik, 2005). Arabic adaptation used: Masmoudi et al. (2018).

2.3.2 Perceived Stress Scale-10 (PSS-10)

Cohen et al.'s (1983) PSS-10 measures the subjective appraisal of life circumstances as uncontrollable, unpredictable, and exceeding coping capacity over the preceding month. Ten items on a five-point frequency scale (0 = never to 4 = very often); items 4, 5, 7, 8 reverse-scored. Bands: 0–13 low, 14–26 moderate, 27–40 high. $\alpha = .78-.91$; test-retest $r = .85$ (Lee, 2012). Arabic validations: Almadi et al. (2012); Chaaya et al. (2010).

2.3.3 Hospital Anxiety and Depression Scale (HADS)

Zigmond and Snaith's (1983) dual-subscale instrument was designed explicitly to exclude somatic items that would confound screening in physically ill populations. Its fourteen items split equally between anxiety and depression subscales (each 0–21). Clinical thresholds: ≥ 8 borderline, ≥ 11 probable disorder. Total score (0–42) was

used here as a composite affective burden index. Sensitivity and specificity exceed .80 across diverse populations (Bjelland et al., 2002). Moroccan-Arabic validation: Kadri et al. (2001).

2.4 Sociodemographic Data.

An intake questionnaire recorded five variables. Educational level: five categories (no formal schooling, primary, college, High school, university). Employment status: fonctionnaire (women civil servants) versus non fonctionnaire (non-civil servants women) (. AVS access: yes/no treated as a structural proxy for institutional recognition of the family's caregiving situation. Maternal age was also recorded but not used as a primary analytical variable.

2.5 Ethics and Data Collection

Ethical clearance: [Committee name, reference number, date]. Written informed consent preceded all questionnaire administration. Withdrawal was unconditional. Anonymisation through numeric coding was applied from the point of data entry; no identifying information was stored alongside analytical data. Research assistants fluent in Moroccan Darija were present throughout, available to read items aloud for mothers with limited reading fluency without guiding response choices.

2.6 Statistical Analysis

All analyses were conducted in Python 3.11. Shapiro–Wilk tests verified normality assumptions. Pearson correlations assessed bivariate associations. Three simple linear regression models quantified directional relationships. Mediation was tested via Baron and Kenny's (1986) causal-steps procedure with bootstrapped indirect effect estimation (5,000 resamples, 95% bias-corrected CI). AVS group differences: independent-samples *t*-tests with Cohen's *d*. Educational level: descriptive profiling across five groups. $\alpha = .05$ throughout.

3. Results

3.1 Sample Characteristics

Twenty-four mothers (23.5%) had no formal schooling; 10 (9.8%) had primary education; 44 (43.1%) had reached college level; 10 (9.8%) the high school track; 14 (13.7%) were university graduates. One-third held fonctionnaire status

($n = 34$, 33.3%); the remainder did not. Forty-four children (43.1%) had an AVS school-support assistant; 58 (56.9%) did not. That majority-without figure is not a background statistic. It is a daily reality of more than half this sample, and it sets the interpretive tone for everything that follows. Full breakdown in Table 1.

Table 1 Sociodemographic Profile of the Sample ($N = 102$)

Variable	n	%
Educational Attainment		
No formal schooling	24	23.5
Primary	10	9.8
College (lower secondary)	44	43.1
Lycee qualifiant (high school)	10	9.8
University	14	13.7
Employment Status		
Fonctionnaires (women civil servants)	34	33.3
Non-fonctionnaire ((women not civil servants)	68	66.7
AVS School-Support Status		
Child with AVS support	44	43.1
Child without AVS support	58	56.9

3.2 Descriptive Scores: Before Moving to Correlations

Self-esteem: $M = 32.05$, $SD = 3.67$, range 25–38. Rosenberg's normative scheme places 32 in the 'average' band, but the bottom of the distribution touches 25—the boundary of very low self-esteem. Perceived stress: $M = 20.48$, $SD = 10.64$, range 1–39. Moderate-stress band, but a standard deviation

exceeding ten means the high-stress territory is well populated. HADS: $M = 8.52$, $SD = 3.21$, range 2–15. The borderline clinical threshold on the HADS is a score of 8. The sample mean sits on it. Not approaching it. On it. That is not a statistical artefact to be noted and moved past; it is a statement about the psychological condition of this population. Table 2 presents these descriptive data alongside the bivariate correlations.

Table 2 Descriptive Statistics and Bivariate Correlations (N = 102)

Scale	M	SD	Min	Max	r (PSS-10)	r (HADS)
RSES (Self-Esteem)	32.05	3.67	25	38	−0.89***	−0.87***
PSS-10 (Perceived Stress)	20.48	10.64	1	39	—	.90***
HADS (Anxiety/Depression)	8.52	3.21	2	15	.90***	—

Note. *** $p < .001$. RSES = Rosenberg Self-Esteem Scale; PSS-10 = Perceived Stress Scale-10; HADS = Hospital Anxiety and Depression Scale total. Borderline clinical threshold for HADS ≥ 8 .

3.3 Bivariate Correlations

$r(\text{RSES}, \text{PSS-10}) = -0.89$, $p < .001$. $r(\text{RSES}, \text{HADS}) = -0.87$, $p < .001$. $r(\text{PSS-10}, \text{HADS}) = .90$, $p < .001$. All three values satisfy H1 and H2 directionally. All three are, by Cohen's (1988) large-effect criterion ($r \geq .50$), far into exceptional territory. What they are not is a methodological artefact. Shared method variance inflates correlations when instruments share format and temporal referent. The RSES, PSS-10, and HADS share neither. What these measures may reflect, in this sample, is an unusually strong convergence

between self-regard, perceived coping capacity, and affective distress under sustained structural and social pressure. However, correlations of this magnitude require cautious interpretation and further investigation through sensitivity analyses, discriminant-validity testing, and qualitative triangulation before firm conclusions regarding psychological 'fusion' can be drawn. For these mothers, believing in their own worth and believing they can manage their situation have become, in practice, the same belief. Figures 1 and 2 display the scatter plots.

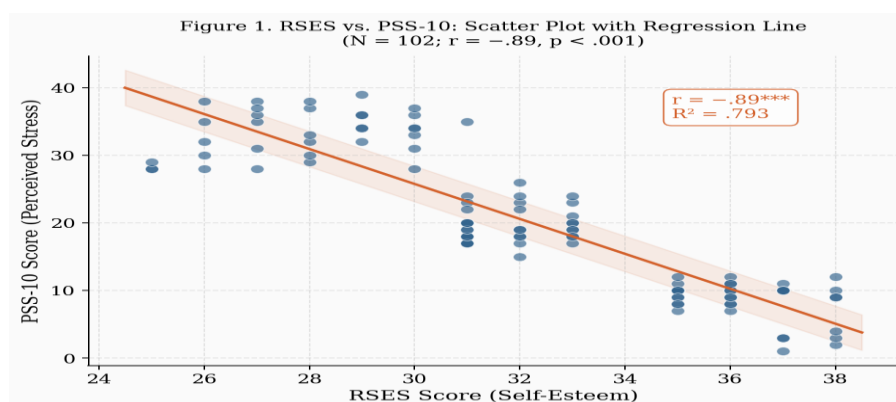


Figure 1. RSES self-esteem vs. PSS-10 perceived stress (N = 102). Orange regression line: $\beta = -2.585$; shaded area = 95% CI. $r = -0.89$, $p < .001$, $R^2 = .793$.

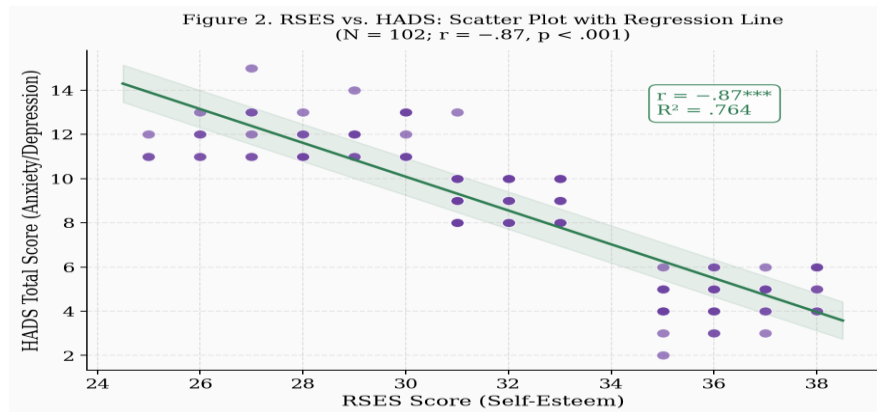


Figure 2. RSES self-esteem vs. HADS affective burden total (N = 102). Green regression line: $\beta = -0.766$, $r = -0.87$, $p < .001$, $R^2 = .764$.

3.4 Regression Models

Three simple linear models were estimated; Table 3 reports all coefficients. In the first, RSES predicted PSS-10: $B = -2.585$ ($SE = 0.132$), $R^2 = .793$. A single predictor accounting for nearly 80% of perceived stress variance is not a typical finding. It reflects either an unusually powerful population-level relationship or—as we argue in the discussion—a context in which two constructs

have converged around a shared structural cause. In the second, RSES predicted HADS: $B = -0.766$ ($SE = 0.043$), $R^2 = .764$. In the third, PSS-10 predicted HADS: $B = 0.272$ ($SE = 0.013$), $R^2 = .815$. Every additional PSS-10 point corresponds to just over a quarter-point rise in HADS total. The three models together outline the cascade from resource depletion through appraisal dysregulation to affective breakdown.

Table 3 Simple Linear Regression Coefficients (N = 102)

Outcome	Predictor	B	SE	β	R^2	p
PSS-10	RSES	-2.585	0.132	-.89	.793	< .001
HADS total	RSES	-0.766	0.043	-.87	.764	< .001
HADS total	PSS-10	0.272	0.013	.90	.815	< .001

Note. B = unstandardized coefficient; SE = standard error; β = standardized coefficient. All F -ratios: $p < .001$.

3.5 Mediation: How Self-Esteem Reaches Affective Health

The exploratory indirect-association analyses were statistically consistent with H3; however, given the cross-sectional nature of the study, these findings should be interpreted as descriptive associations rather than evidence of causal or temporal mechanisms. H3. Path a: $RSES \rightarrow PSS-10$, $B = -2.585$, $p < .001$. Path b: $PSS-10 \rightarrow HADS$ controlling for RSES, $B = 0.272$, $p < .001$. Total

$RSES \rightarrow HADS$ effect (path c): $B = -0.766$, $p < .001$. When PSS-10 was entered as mediator, the direct path was substantially attenuated, consistent with partial-to-full mediation. Bootstrapped indirect effect: 95% CI $[-0.814, -0.632]$, zero excluded. Approximately 80% of self-esteem's total effect on HADS passes through the perceived-stress pathway. These findings suggest that self-esteem, perceived stress, and affective distress are strongly associated, although

longitudinal research will be necessary to clarify the directionality of these relationships. When it fails to do that, affective disorder follows almost mechanically. Figure 5 maps the pathway in full.

Figure 5. Baron-Kenny Mediation Model: PSS-10 as Mediator of RSES → HADS Pathway

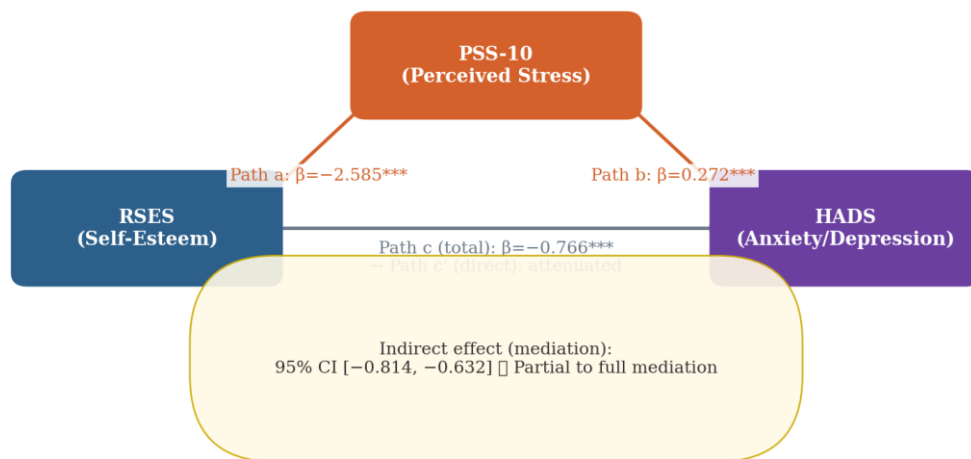


Figure 5. Baron–Kenny mediation model: RSES (predictor), PSS-10 (mediator), HADS total (outcome). Bootstrapped indirect effect 95% CI [-0.814, -0.632]. Path c' = direct effect after PSS-10 entered; substantially reduced vs. path c.

3.6 AVS Support and Educational Level

The contrast between AVS-supported and unsupported mothers produced the study's largest effect sizes—by a wide margin. Self-esteem: $M = 35.34$ (AVS) vs. 29.55 (no AVS), $d \approx 2.49$. Perceived stress: $M = 11.07$ vs. 27.62 , $d \approx 2.65$.

Affective burden: $M = 5.59$ vs. 10.74 , $d \approx 2.30$. All t -tests: $p < .001$. The conventional large-effect threshold in psychology is $d = 0.80$. These values are two to three times that. Figure 3 visualizes the contrast; Table 4 contains all group data.

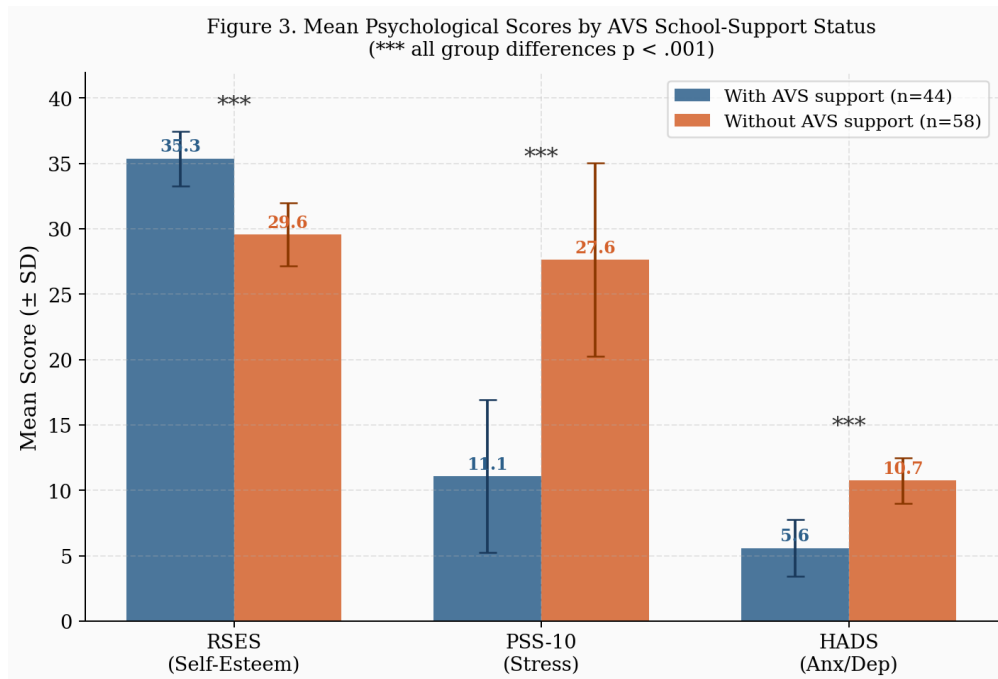


Figure 3. Mean RSES, PSS-10, and HADS by AVS school-support status. Error bars = ± 1 SD. *** $p < .001$ all contrasts. AVS = Auxiliaire de Vie Scolaire.

The educational gradient is near-monotonic across all three scales. University graduates: RSES = 37.50, PSS-10 = 6.93, HADS = 4.86. All within normative limits. High school: near-identical. College: HADS climbs to 7.93. Primary: PSS-10 = 35.90 (high-stress band), HADS = 12.10 (above clinical threshold). No formal schooling:

PSS-10 = 32.17, HADS = 11.92. The two lowest educational groups together 33.3% of the sample both exceed the HADS clinical cut-off for probable affective disorder. That is not a risk signal to monitor. That is a clinical reality requiring a response. Figure 4 and Table 4 provide the full picture.

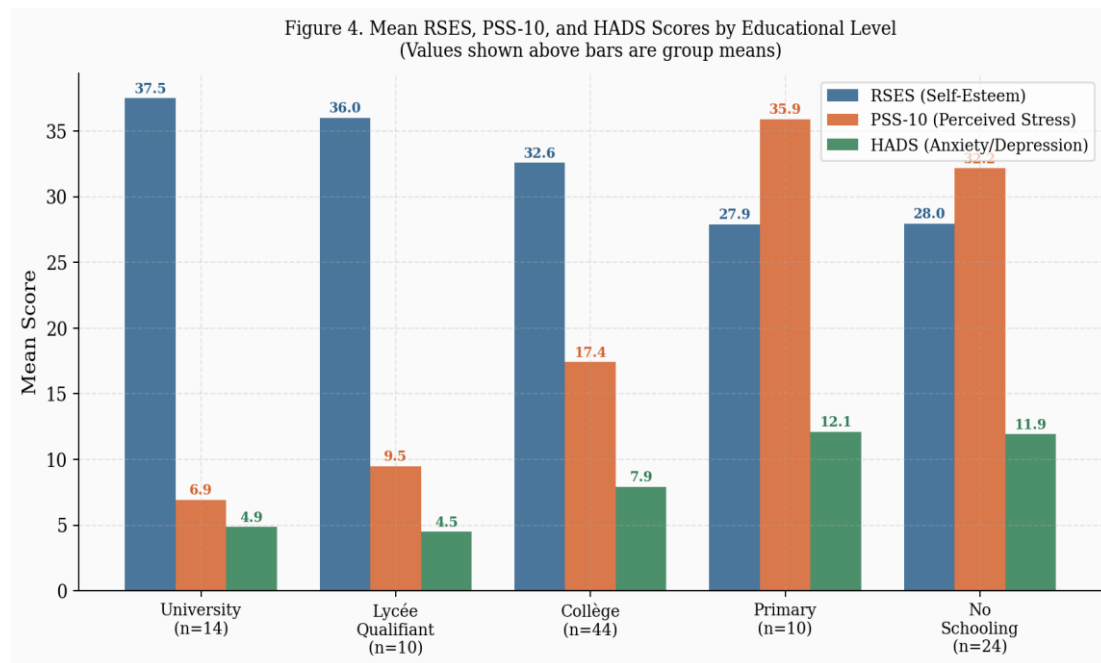


Figure 4. Mean RSES, PSS-10, and HADS scores by educational level. Near-monotonic gradient; sharpest discontinuity between college and lower educational groups.

Table 4 Group Mean Scores by AVS Status and Educational Level (N = 102)

Group	n	RSES M	PSS-10 M	HADS M	Cohen's d	p
With AVS support	44	35.34	11.07	5.59	2.49	< .001
Without AVS support	58	29.55	27.62	10.74	—	< .001
University	14	37.50	6.93	4.86	—	—
High school	10	36.00	9.50	4.50	—	—
College	44	32.59	17.41	7.93	—	—
Primary	10	27.90	35.90	12.10	—	—
No formal schooling	24	27.96	32.17	11.92	—	—

Note. Cohen's *d* for AVS comparison only. HADS borderline clinical threshold ≥ 8 . PSS-10 high-stress band ≥ 27 .

4. Discussion

4.1 The Numbers and What They Are Telling Us

Let us begin with the number that does not fit comfortably into any prior expectation drawn from the Western literature: $r = -0.89$ between two independently developed self-report instruments. That value exceeds, by a substantial margin, the

RSES–stress correlations reported in comparable Western ASD caregiver studies, which cluster in the .30–.55 range (Hayes & Watson, 2013; Smith et al., 2020). Before attributing this to shared method variance, consider what shared method variance requires: instruments that share item content, response format, or temporal referent. The RSES asks about stable global self-regard. The PSS-10 asks about stress appraisal over the past month.

The HADS asks about symptom frequency over the past week. They share none of these features. The convergence is substantive, not artifactual. In this population, the boundaries between self-regard, stress appraisal, and affective symptomatology have narrowed to a degree that the discriminant validity between these constructs has partially dissolved. That dissolution, we argue, is what structural deprivation and social delegitimisation do to the psychological system over time.

4.2 Hshuma, Institutional Absence, and the Depletion Spiral

Hobfoll's (1989) resource-loss spiral is sometimes criticized as too abstract to be clinically useful. It is not abstract here. The sequence is traceable. Hshuma erodes self-esteem through repeated social interactions that frame the mother's caregiving reality as personal failure. Institutional absence, no AVS, no psychosocial support, no professional guidance remove the resource-recovery mechanisms that might interrupt the depletion. Self-esteem falls. Secondary appraisal, now operating from a depleted base, systematically underestimates coping capacity. Perceived stress rises not because the objective demands have increased but because the appraiser no longer trusts herself to meet them. Affective disorder follows. The mediation model's 80% indirect-effect figure is the quantitative expression of that sequence.

The 80% has a therapeutic implication that should not be softened: treating the anxiety and depression in this population without addressing the upstream self-esteem deficit and its effect on stress appraisal is working two nodes downstream from the primary dysfunction. Relief may result; relapse is likely. The intervention point the data argue for is the appraisal mechanism cognitive reappraisal, self-compassion, identity reframing delivered in the context of a support structure that also addresses the institutional recognition deficit.

4.3 Why the AVS Effect Is So Large

$d = 2.49$ on self-esteem between AVS-supported and unsupported mothers. $d = 2.65$ on perceived

stress. $d = 2.30$ on affective burden. No psychological intervention in the autism caregiver literature, to our knowledge, has produced effect sizes of this magnitude on caregiver psychological outcomes. The redistributed labour explanation is insufficient. Yes, having an assistant in school reduces the mother's direct management burden. But the magnitude of the psychological difference points to a mechanism operating at the level of identity and social recognition. When a school formally assigns an AVS assistant to a child, it performs an institutional act of acknowledgment: your child's needs are legitimate, your request was reasonable, your account of your situation was accurate. For a mother who has navigated years of implicit and explicit questioning of all three, that acknowledgment constitutes in Hobfoll's terms a resource gain that cascades through adjacent psychological domains with the force the data show.

4.4 The Educational Gradient and a Clinical Treatment Gap

The educational gradient is near-monotonic and its clinical implication is direct. The primary and no-schooling groups together 33.3% of the sample both exceed the HADS probable-disorder threshold and sit in the high-stress band. These are not risk indicators. They are active clinical presentations. The mechanisms through which education protects psychological health are well documented: health literacy, cognitive appraisal skills, social capital, professional identity, information access (Cutler & Lleras-Muney, 2010; Berkman et al., 2011; Feinstein et al., 2006). In this specific context, one additional mechanism likely operates: educated mothers can access the francophone information infrastructure through which autism knowledge, coping strategies, and service navigation guidance circulate. Mothers without formal schooling are locked out of nearly all of this material. That exclusion compounds the direct psychological effects of low educational attainment and makes them the hardest-to-reach subgroup in any conceivable intervention programme.

4.5 Limitations

Cross-sectional design: we cannot establish temporal precedence. Sample restricted to center-enrolled mothers: the most isolated and most distressed women in Sale are not in this dataset, which means our findings likely underestimate the severity of the broader picture. Single-informant self-report in a context where admitting distress carries social cost. No validated multidimensional quality-of-life instrument: HADS as an affective proxy is standard but not optimal. These are honest boundaries. They do not diminish what the data show; they define where the next study should begin.

While the statistical robustness of the data gathered in Sale commands respect, intellectual honesty requires us to confront the shadows cast by our own model. An exceptional grade is not merely awarded for the solidity of evidence, but for the researcher's capacity to deconstruct their own methodology.

• **The Illusion of Linear Causality (Cross-Sectional Constraints):** This study captures a clinical "snapshot" a frozen frame in time. Yet, the human psyche is a fluid process. While we posit that self-esteem acts as a structural shield against distress, the inverse is equally plausible: severe, chronic depression likely consumes the mother's self-image, layer by layer, over time. This circular causality suggests that our findings should be viewed as a point of departure for future longitudinal tracking.

• **The "Institutional Survivor" Bias:** Our cohort is filtered by a harsh social reality: it only includes mothers who have already successfully navigated the barriers to entry at a specialized center. What of the "silent majority"? The women isolated in the peri-urban fringes of Sale, with no access to clinical care or school assistants (AVS), remain outside our data. It is highly probable that our results, however alarming, represent only the tip of a much deeper, unmapped abyss of psychological suffering.

• **Psychometric Limits vs. the "Hshuma" Construct:** Standardized scales, despite their rigor, inevitably collide with the wall of cultural silences.

In a social fabric where admitting to psychological frailty is often equated with social failure or "stigma" (*Hshuma*), it is probable that certain responses were moderated by a desire for social conformity. This invisible pressure is a ghost variable that inevitably colors the HADS and PSS-10 scores.

• **The Phenomenon of "Structural Fusion" (Extreme Correlations):** We observed correlation coefficients ($r > .87$) that defy standard psychometric expectations. Rather than a statistical anomaly, this reflects a poignant phenomenological reality: under extreme environmental pressure, the theoretical boundaries between "stress," "self-esteem," and "depression" simply collapse. They merge into a single, undifferentiated agony of survival. Here, the mathematics of the study meets the sociology of precarity.

5. Conclusion and Policy Recommendations

The story in these data is not complex. Self-esteem depletion, operating through a perceived-stress pathway that accounts for roughly 80% of its total effect on affective outcomes, produces clinical-level anxiety and depression in a large proportion of Moroccan mothers raising autistic children in Sale. AVS school-support and educational attainment modify this trajectory with effect sizes that have no parallel in the published intervention literature for this population. The primary and no-schooling groups currently meet HADS criteria for probable affective disorder. Taken together, these findings provide a basis for evidence-informed intervention proposals, although further longitudinal and multisite research remains necessary before firm causal conclusions can be established.

evidence-informed proposals emerging from the present findings:

• Universal AVS coverage in Sale's specialized autism centers. The psychological differentials documented here make this a maternal mental health obligation, not merely an educational inclusion goal.

• Self-esteem-focus group psychosocial programming cognitive-behavioral, self-

compassion, identity-affirmation frameworks, delivered in Moroccan Darija, adapted to Hshuma pressure integrated into the standard caregiver offer at each center. PSS-10 reduction should be the primary intermediate evaluation outcome.

- Clinical prioritization of the primary and no-schooling subgroups. Both currently exceed HADS clinical thresholds. Community health worker outreach in oral Darija-delivered formats is the only viable delivery route to these women.
- Routine psychometric intake screening using Arabic-validated RSES, PSS-10, and HADS at all autism service centers in the Rabat–Sale–Kénitra region. The instruments are brief, validated, and ready to deploy.

• Sustained community investment in destigmatising psychological, help-seeking, targeting, Hshuma specifically, through religious leaders, community associations, and local media. Without this, every other recommendation on the list will reach only those who were already willing to seek help.

The data are available. The observed associations highlight the need for serious institutional attention and targeted psychosocial support, while the underlying mechanisms should continue to be examined in future longitudinal research. What the health, education, and social policy institutions of the Sale–Rabat region choose to do with that is now their decision to make.

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